R-1 MULTI•TRACK RECORDER

Supplement to the R-1 Digital Multitrack Operation Manual

Version 3.0

Part Number: 840-07912-01

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HIGH PERFORMANCE AUDIO SYSTEMS

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Table of Contents

List of Figures v

Chapter 1: Overview of Version 3 7

1.1 Software Feature Overview 8
1.1.1 Sound File Transfer to and from the R-1 8
1.1.2 Display Enhancements 8
1.1.3 Editing Enhancements 8
1.1.4 Bars and Beats 9
1.1.5 Transport Advancements 10

1.2 System Configuration 10
1.2.1 Machine Control and Varispeed behavior 10
1.2.2 Studio Hub Software Routing 10

Chapter 2: Display Features 15

2.1 Waveform Display 15

2.2 Metering and Zoom Features 18

2.3 Bars and Beats 20
2.3.1 Tempo and Time Signature 20
2.3.2 Re-order Regions 22
2.3.3 Create a Click Track 23

Chapter 3: File Management 25

3.1 Launching New Titles 25
3.1.1 The Significance of Good Naming Practices 26

3.2 File Interchange 26
3.2.1 Export from the Directory Software Panel 27
3.2.2 Export from the Multitrack Panel 28
3.2.3 Importing WAV Files 31
3.2.4 Import to the Directory 31
3.2.5 Import to the Multitrack 32
3.2.6 Using Imported Files or Files from Other Titles 34
3.2.7 Restoring a Title from Its Library of Sounds 35

Chapter 4: Locator and Track Controls 37

4.1 Track Controls 37
4.1.1 Monitoring 37
4.1.2 The Effect of Linking 37

4.2 The Locator 38
4.2.1 The Cue Track 38
4.2.2 Reel Trim 39
4.2.3 Jog, Shuttle, and Reel Trim with the Pointer 39
4.2.4 Clip Edge Locating 41

Chapter 5: Editing and Selection Features 43

5.1 Editing Features 43
5.1.1 Paste Relative 43
5.1.2 Place Clips from the Directory 44
5.1.3 Cue Track Editing 45

5.2 Selection Features 46
5.2.1 Selecting Clips 46
5.2.2 Wireframe Selection 47
5.2.3 Selecting Everything 47
5.2.4 Context-Sensitive Popup Menus 48

5.3 The Info Drop-down Panel 49
5.3.1 Clip Info 50
5.3.2 Track Info (when one track is selected) 52
5.3.3 Selection Info (with more than one track selected) 53

List of Figures

1-1 Router App: Edit Configuration Dialog 11

1-2 Router App: Routing Dialog 12

1-3 Router App: Patches Dialog 13

2-1 Waveforms with selected region on two tracks 15

2-2 Track Edit popup menu 16

2-3 Fades Display 17

2-4 Adjustable Decay Rate for Metering 18

2-5 Right-click Metering popup menu 18

2-6 Default Crossfade time for all new punches 19

2-7 The Zoom to Selection and Zoom to Extents controls 19

2-8 Zoom to Selection 19

2-9 Zoom to Extents 20

2-10 Edit Tempo Map Window 21

3-1 Export button illuminates when Sound File is selected 27

3-2 Multi-selecting Sound Files for Export 27

3-3 Export command in the Clips popup menu 28

3-4 The Export to Wave Dialog launched from the Multitrack 29

3-5 Change Export Name Dialog 30

3-6 The Import Wave Files dialog 32

3-7 The Add Wave File to Import List dialog 33

3-8 The Import Wave Files dialog 33

3-9 Replace or create a new Sound File 33

3-10 Selecting a Sound File illuminates the Copy button 34

4-1 Cue Track right-click menu 38

5-1 Paste Relative in the Track Edit and Selection popup menus 44

5-2 Ripple with Cues selected in the Track Edit popup menu 45

5-3 Select a complete Clip by clicking on its waveform/block. 46

5-4 Wireframe Selection 47

5-5 Cue Track (left) and Clip Select (right) Right-click Menus 48

5-6 Track Name Select Right-click menu 49

5-7 Clip Info dialog 50

5-8 Editing the Tail Trim in the Clip Info dialog 50

Chapter 1: Overview of Version 3

As the first multitrack digital recorder to support the 24-bit/96 kHz format, the R-1 is setting a new standard for professional, multitrack, audio recording. Euphonix combined our staff's innovations with creative feedback from our users to make version 3 more powerful and easier to use than ever. As the R-1 continues to mature, its capabilities are expanding into additional audio production areas and it is becoming more compatible with other audio components.

This *Supplement to the R-1 Operation Manual* discusses all changes and new features offered by the R-1 Pilot hardware and software version 3.0. If a feature's description differs in the *R-1 Operation Manual* from this supplement, the supplement should be considered correct.

The following is included in the upgrade:

- **Version 3.0 ghost-image CD**: Can be used to update or restore the entire R-1 pilot operating system and also upgrades the R-1 software to version 3.0.
- **Version 3 R-1 application software installer**: Used to upgrade *only* the R-1 software to the most current version at the time of purchase. The installer allows including the newest software version without creating an entirely new ghost-image CD-ROM.
- **Upgraded and Refurbished Computer Pilot**: The upgrade includes replacing your R-1 Pilot Computer with a completely refurbished model including several new, higher-powered components. The local non-audio hard drive and RAM are larger (256 MB), and the CPU is much faster (933 MHz). This upgrade will improve the overall performance of your R-1, as well as maintain compatibility of the Pilot Computer with this and subsequent releases. Your old R-1 Pilot *must* be returned to Euphonix when your upgrade is installed. Euphonix technical support and field technicians will gladly help make this a smooth transition. All required software is pre installed.
- **New Remote button**: **Reel Trim** resides next to the **Shuttle** button. Includes a key-puller to remove blank buttons.
- **Version 3 manual addendum**: This document you are reading describes all new version 3 features.
- **Revised supplemental device manuals**: Revisions of the Pilot, Studio Hub and Remote manuals provide new information for version 3.
- **48-track wiring diagram**: Shows how to connect the components of a standard 48-track R-1 system.

1.1 Software Feature Overview

This section introduces the most important new features; each is discussed in more detail in subsequent chapters.

1.1.1 Sound File Transfer to and from the R-1

The R-1 can now capture sound files from either the R-1 Directory system or the displayed track sheet, and export them as Broadcast WAV (BWAV) files. BWAV files are extended versions of the WAV format. They are compatible with any software that reads WAV files, even if that software does not use or preserve the additional data. BWAV is the standard file format of the European Broadcast Union and of the committee developing the AES 31 file interchange standard. BWAV files are compatible with Windows and Macintosh platforms. Because the R-1 is used extensively as a 24-bit/96 kHz mastering recorder, version 3 allows direct transfer of multichannel BWAV files to a DVD authoring system. See Chapter 3: *File Management* for more information.

1.1.2 Display Enhancements

Metering in the R-1 has been widely praised and now includes the following new options:

- decay-peak hold
- no-peak hold
- re-settable, no-decay-peak hold
- adjustable decay rate

The crossfade time, now always visible on the Navigation Bar of the on-screen display, can be set in the Record dialog as well as by its previous method.

The track sheet now shows waveforms for all Clips. In addition, the name of the file is shown, which aids import and export operations. The file name display can be disabled if it is too long; a selected clip and any clip under the cursor will still display its full name.

New Zoom features include: **Zoom on Selection** quickly jumps to the view previously assigned to that section; zoom in on the track sheet displays sample-accurate Waveforms.

New Selection hotkeys, include **Select All Time** and **Select All Tracks**.

See Chapter 2: *Display Features* for complete information.

1.1.3 Editing Enhancements

Clip-based selection and editing along with the waveform display make the R-1's editing tools easier and more powerful to use. These enhancements allow a greater range of editing operations on the R-1 without transferring to a separate editor. On-board editing can even fix problems that previously required punch recording. Waveform display makes locating edit points easier and faster.

The trackball cursor can now select Clips (punch segments) with a single click. It is now also possible to *wireframe select* using the trackball and to precisely adjust Clip, selection, or track parameters in a context-sensitive **Information** dialog. Many edit operations are now accessed from drop-down menus, such as restoring the original recording parameters to previously edited Clips.

Audio clips from other Titles or imported from another file format can now be placed in tracks of the current Title.

See Chapter 5: *Editing and Selection Features* for complete information.

Context-Sensitive Popup Menus

Right-clicking with the trackball pointer produces context-sensitive popup menus in several new places. Right-clicking never does anything harmful or data altering, so you can experiment to find out how version 3.0 works. See Figure 5-5 and Figure 5-6 for examples of the popup menus.

1.1.4 Bars and Beats

The R-1's extensive Title Time display now includes **Bars, Beats, and Ticks**. When selected, the time locator accepts and displays time information in these more musically meaningful units. A tempo map editing page permits up to 16 tempo regions per Title. A click track can be created using one imported WAV file for the beat marks of the current tempo map and a second WAV file for the downbeat. (See *Create a Click Track* on page 23.)

1.1.5 Transport Advancements

The Remote now supports **Reel Trim** (next to the **Shuttle** button), allowing the **SpinKnob** to navigate inaudibly through material to look for gaps or downbeats. Using the **Reel Trim** simultaneously with the Remote's quick Zoom keys locates quickly and precisely. On the Multitrack display panel, **Reel Trim**, **Jog**, and **Shuttle** are all supported under trackball control. The play head can be dragged (while in **Stop**, **Jog**, or **Shuttle** mode) by clicking on the Cue Track, holding down, then pulling the cursor toward the material that should play. Press the **Ctrl** key to reverse the effect of pulling the cursor across the Cue Track. Toggling with the **Ctrl** key is a convenient method for rolling back and forth across a given area.

Locate to Previous and Next Cues with the |<< and >>| keys, respectively, and to Clip edges using the **Wave** + |<< and **Wave** + >>| keys.

See Section 4.2 - *The Locator* for complete information.

1.2 System Configuration

1.2.1 Machine Control and Varispeed behavior

Unlike previous versions, Varispeed is *not* automatically defeated upon receiving a Machine Control Play commands.

A new machine control **Chase** command has been added that is compatible with more machine control systems. The Chase command causes the R-1 to chase incoming time code, while it continues to look for machine control commands for track arming and master Record.

1.2.2 Studio Hub Software Routing

Version 3 includes an applet that runs in parallel with the R-1 software to provide real-time routing control over the R-1's MADI hub. The Router provides three tab-style pages to manage resources and control signal flow:

- **Edit Configuration**: An editable configuration map of the R-1 to define and name hardware components (Figure 1-1).
- **Routing**: A routing interface to interconnect components. It is no longer necessary to know what port carries which signals (Figure 1-2).
- **Patches**: Name, store, and recall routing patches (Figure 1-3).

The Patch manager can store a virtually unlimited number of routing and configuration set-ups in software on the Pilot. You can still use the Studio Hub front panel to set-up MADI routing, and you can still save user routes in the 20 allocated slots in the Studio Hub hardware.

Edit Configuration

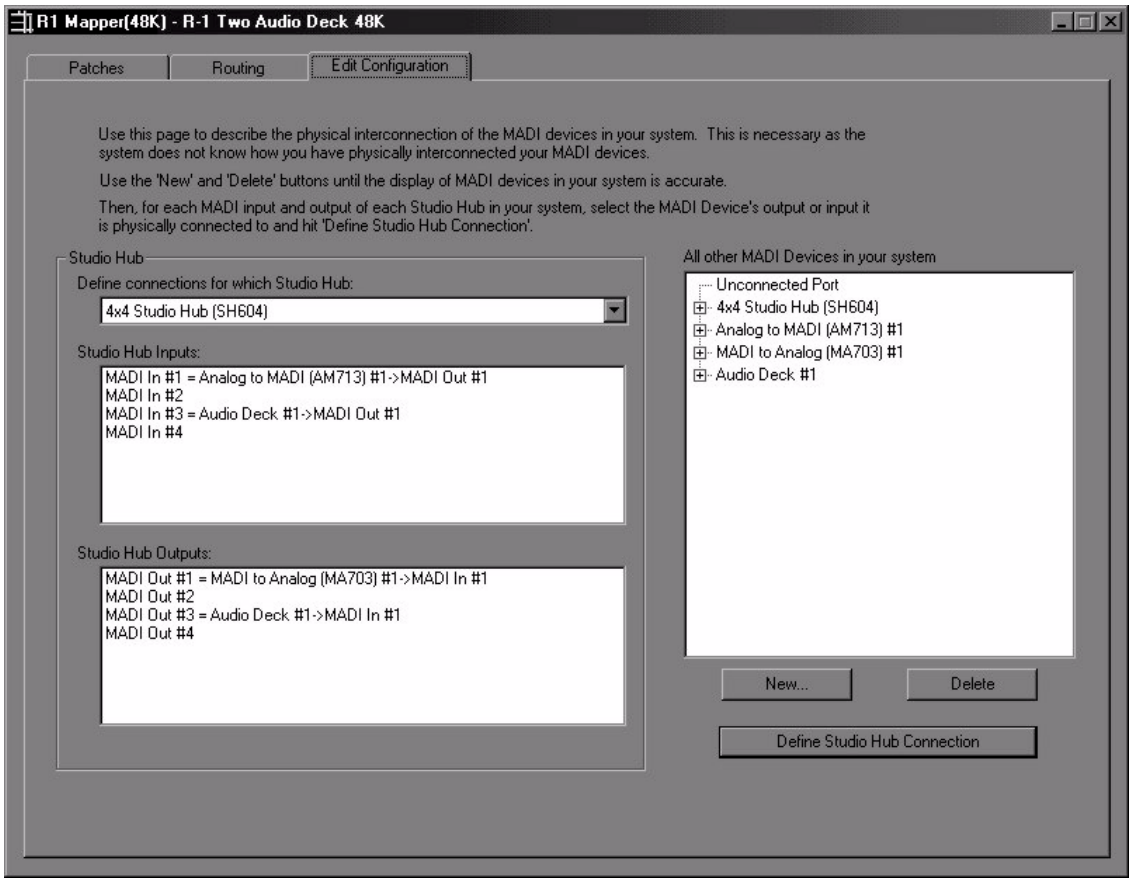

R1 Mapper(48K) - R-1 Two Audio Deck 48K
Patches
Routing
Edit Configuration
Use this page to describe the physical interconnection of the MADI devices in your system. This is necessary as the system does not know how you have physically interconnected your MADI devices.
Use the 'New' and 'Delete' buttons until the display of MADI devices in your system is accurate.
Then, for each MADI input and output of each Studio Hub in your system, select the MADI Device's output or input it is physically connected to and hit 'Define Studio Hub Connection'.
Studio Hub
Define connections for which Studio Hub:
4x4 Studio Hub (SH604)
Studio Hub Inputs:
MADI In #1 = Analog to MADI (AM713) #1->MADI Out #1
MADI In #2
MADI In #3 = Audio Deck #1->MADI Out #1
MADI In #4
Studio Hub Outputs:
MADI Out #1 = MADI to Analog (MA703) #1->MADI In #1
MADI Out #2
MADI Out #3 = Audio Deck #1->MADI In #1
MADI Out #4
All other MADI Devices in your system
Unconnected Port
4x4 Studio Hub (SH604)
Analog to MADI (AM713) #1
MADI to Analog (MA703) #1
Audio Deck #1
New...
Delete
Define Studio Hub Connection

Figure 1-1 Router App: Edit Configuration Dialog

Click on the **Edit Configuration** tab to begin building a configuration. Under the heading **All other MADI Device,** make sure all system components are listed and that the Studio Hub is listed with the correct size. Highlight and delete unnecessary components. Add a new component by pressing the **New** button and selecting R-1 and MADI devices from the dialog box that appears.

Next, define how the MADI ports of each device are connected to each other. This replicates your MADI connections on the rear of the R-1. For example:

1. Under **Studio Hub Inputs**, select MADI In #1.
2. Under **All Other MADI Devices,** select MADI Out #1 of the Analog to MADI (AM 713)#1.
3. Click **Define Studio Hub Connection** to confirm the selections.

When selecting from the **All Other MADI Devices**, you will need to expand the list of components to see types of connections available. For instance if you click on the + next to Audio Deck you will see its Inputs and Outputs. Expand the Outputs to see the two different outputs available.

Routing

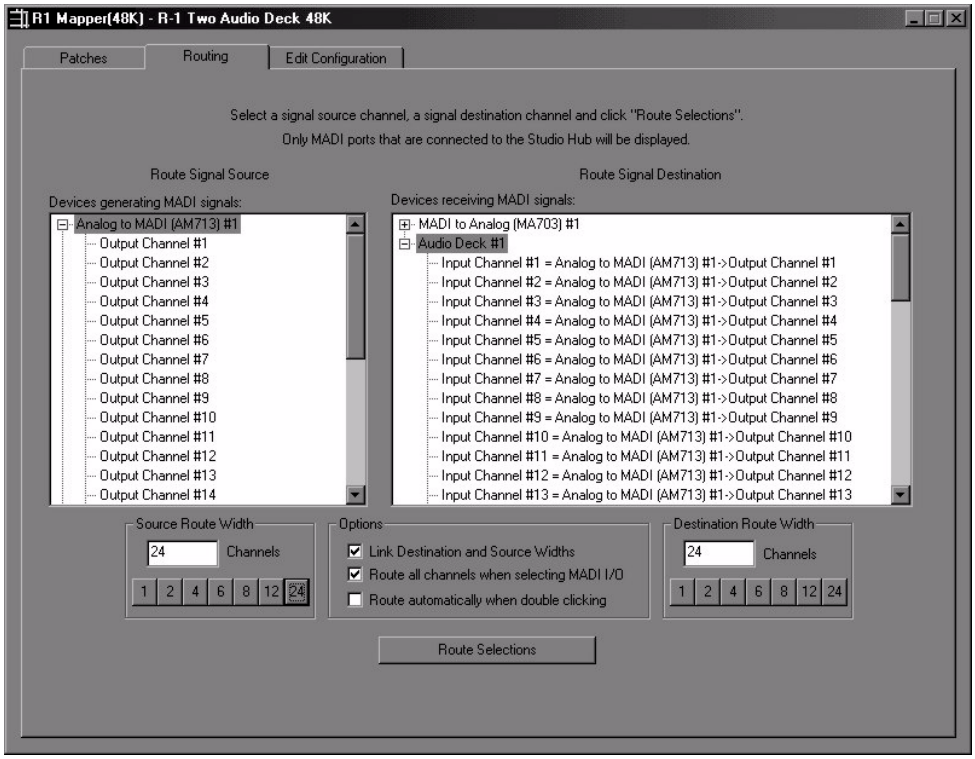

R1 Mapper(48K) - R-1 Two Audio Deck 48K
Patches
Routing
Edit Configuration
Select a signal source channel, a signal destination channel and click "Route Selections".
Only MADI ports that are connected to the Studio Hub will be displayed.
Route Signal Source
Devices generating MADI signals:
Analog to MADI (AM713) #1
Output Channel #1
Output Channel #2
Output Channel #3
Output Channel #4
Output Channel #5
Output Channel #6
Output Channel #7
Output Channel #8
Output Channel #9
Output Channel #10
Output Channel #11
Output Channel #12
Output Channel #13
Output Channel #14
Route Signal Destination
Devices receiving MADI signals:
MADI to Analog (MA703) #1
Audio Deck #1
Input Channel #1 = Analog to MADI (AM713) #1->Output Channel #1
Input Channel #2 = Analog to MADI (AM713) #1->Output Channel #2
Input Channel #3 = Analog to MADI (AM713) #1->Output Channel #3
Input Channel #4 = Analog to MADI (AM713) #1->Output Channel #4
Input Channel #5 = Analog to MADI (AM713) #1->Output Channel #5
Input Channel #6 = Analog to MADI (AM713) #1->Output Channel #6
Input Channel #7 = Analog to MADI (AM713) #1->Output Channel #7
Input Channel #8 = Analog to MADI (AM713) #1->Output Channel #8
Input Channel #9 = Analog to MADI (AM713) #1->Output Channel #9
Input Channel #10 = Analog to MADI (AM713) #1->Output Channel #10
Input Channel #11 = Analog to MADI (AM713) #1->Output Channel #11
Input Channel #12 = Analog to MADI (AM713) #1->Output Channel #12
Input Channel #13 = Analog to MADI (AM713) #1->Output Channel #13
Source Route Width
24
Channels
1 2 4 6 8 12 24
Options
Link Destination and Source Widths
Route all channels when selecting MADI I/O
Route automatically when double clicking
Destination Route Width
24
Channels
1 2 4 6 8 12 24
Route Selections

Figure 1-2 Router App: Routing Dialog

You can make individual channel patches/routes by selecting the **Routing** tab.

Route Width, at the bottom of the window, sets the number of contiguous channels selected. For example, if your Route Width is four and you select channel 1, channels 1–4 are all selected for routing.

To change a patch or route, select a channel under one of the MADI devices in **Devices Generating MADI signals**. For example:

1. Click on the + next to Analog to MADI (AM 713) #1 and select Output Channel #1.
2. Under **Devices receiving MADI Signals**, click the + next to Audio deck #1 and select Input Channel #2.
3. Now click on the **Route Selections** button at the bottom of the dialog.

   This routes channel 1 from your AM 713 #1 to channel 2 of your Audio Deck #1.

You can then save this new route as a new Patch as described in the Patches section below.

Patches

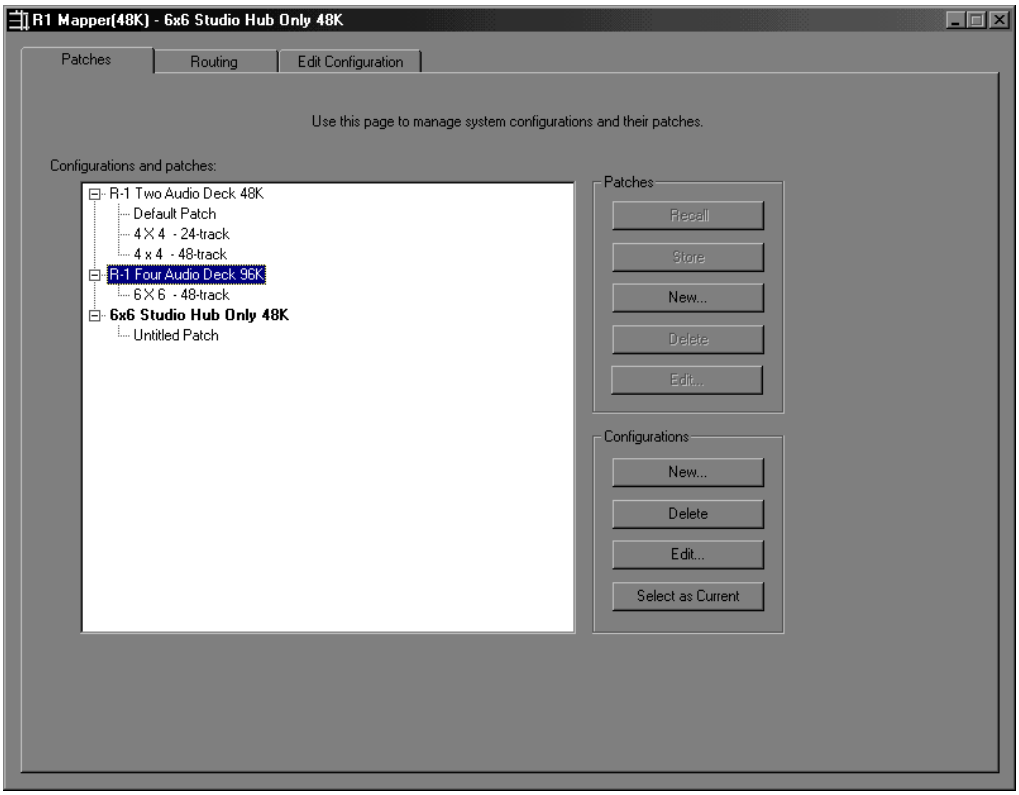


Figure 1-3 Router App: Patches Dialog

Once the MADI connections have been defined:

1. Click the **Patches** tab to save the configuration.
2. Click the **New** button under Patches.
3. Name your configuration.
4. Press the **OK** button.

You change your Patches later by selecting the Patch to change, editing, and then clicking **Store**. To recall a Patch simply select the Patch you want and click on Recall. You can also create new, delete, or make current different configurations under the Configuration section of the Patches tab.

Once the configuration of your system is entered, numerous and very different routes can be created quickly and easily. See Chapter 6: *Routing* for more information.

NOTE: *Unlike beta-test versions of the routing application that were previously available but not released, this application runs while the R-1 Application is still open.*

Chapter 2: Display Features

This section introduces version 3's new display features:

- Waveform display
- Zoom controls
- **Reel Trim** and cursor-based Jog and Shuttle
- Clip-edge Locating
- **Bars, Beats, and Ticks** display mode

2.1 Waveform Display

The R-1 shows waveforms for all Clips in the track sheet unless you choose otherwise. All waveforms are drawn bipolar. The 3-D *tubular* Clips in previous versions have been abandoned in favor of simpler waveform displays. Waveforms allow you to more easily see gaps in the content, fully silent edit points, clipping or near clipping, downbeats, and similar material on separate tracks. Depending on your level of experience with using waveforms, you may even recognize certain instruments.

Figure 2-1 Waveforms with selected region on two tracks

Regardless of your experience viewing waveforms, you will quickly discover the power of seeing, as well as hearing, the content. Waveform display can also be disabled. Waveforms can be visually distracting, use screen space, and may slow down display. If you prefer to use your ear to locate by scrubbing or playing audio, you may want to disable waveform display.

It is also possible to display the Sound File name for each Clip. It may help to turn off the waveform display because names are easier to read against a plain block of color. Showing the name of the Sound File can assist import and export operations. However,

if the file name display is too much information (i.e., it can obscure the waveform) it too can be turned off. The selected Clip and any Clip under the trackball cursor will still display its name.

To disable the waveform view and/or the file name view on any given Track:

1. Right-click on the Track Name.

   The Track Edit popup menu appears.

Figure 2-2 Track Edit popup menu

2. Select **Display Waveforms** and/or **Display File Names**.

   Each item's state toggles when selected.

3. To globally set the **Display Waveforms** and/or **Display File Names** for all tracks, press the **Wave** + **(Select Enable) Select All** keys.

   All tracks are highlighted.

4. Right-click over any one of the selected tracks.

   Enabling/disabling either display mode affects all tracks.

Zooming

The R-1 allows you to zoom in on the track sheet to display sample-accurate waveforms. At level 6 and below (zoom in for lower levels) there may be a pause while the waveforms calculate. This is due to the large amount of audio data being refreshed directly from the audio hard drives for each new view. The waveforms at these levels *do not refresh* while the Transport is active because it uses all of the system's resources. When Transport operations cease, the waveforms refresh.

Caching

At zoom levels higher than 6, the audio data is not drawn from the audio disks but is displayed using a cache of lower resolution data. This cache data is kept on the R-1 Pilot and *not* on the audio disks. Moving an audio disk to a new system (with a different Pilot) requires recalculating the waveforms. Initial calculation of the waveform data is done as soon as you press the **Stop** button after record.

Although it may take some time for the R-1 to process the audio to create the waveforms, it is done in the background while you continue to work. However, the waveform calculation does not progress while the Transport is active. The entire disk throughput is dedicated to play and record reliably—waveform calculation is only allowed to be active during Transport idle time. The R-1 also attempts to calculate waveforms where you are working first. Only waveforms in the currently open Title are calculated.

While the waveforms are still being calculated, a single zero level green line is shown inside the Clip. Clips (full-scale points in the waveform) are shown with a red highlight on the edge of the waveform.

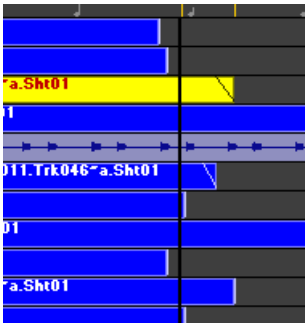


Figure 2-3 Fades Display

Fades are shown by a very light blue line which superimposes over the darker blue waveform or block (a selected Clip has these colors inverted). The figure above shows the block display mode on all Clips. The only Clip with waveforms visible is the Clip currently under the trackball cursor—this *pointed to* clip always shows waveforms and the sound file name.

2.2 Metering and Zoom Features

Metering

Metering in the R-1 has been widely praised and includes a decaying peak hold, no peak hold, and no decay (manually reset-able) peak hold. R-1 metering now supports a user adjustable decay rate to get just the effect that the engineer needs to see.

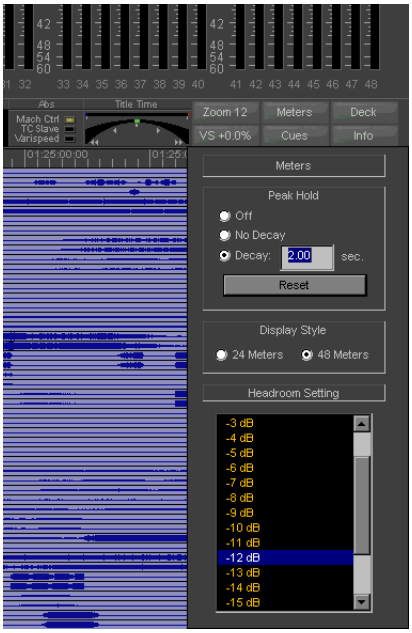


Figure 2-4 Adjustable Decay Rate for Metering

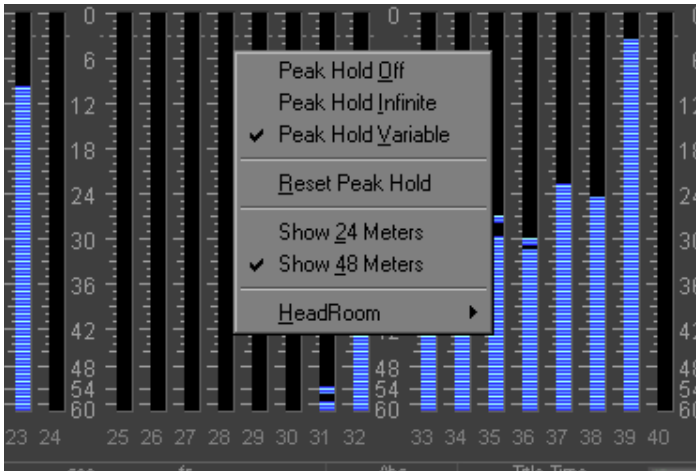


Figure 2-5 Right-click Metering popup menu

Crossfades

The crossfade time is now always visible on the Navigation Bar of the on-screen display. Adjust the crossfade time as before or set it in the Record dialog.

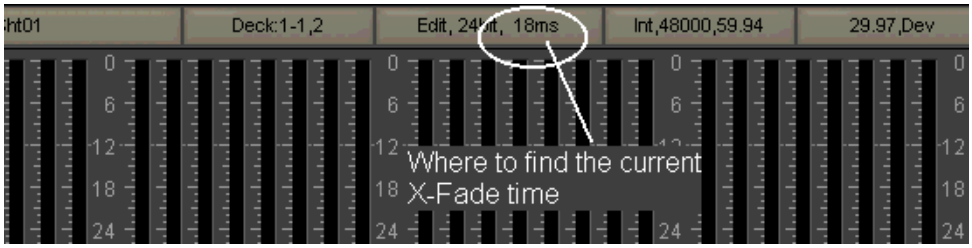


Figure 2-6 Default Crossfade time for all new punches

Zoom Features

Perhaps the most useful of the new Zoom features is **Zoom to Selection**, which quickly zooms to a selected section. **Zoom to Extents** shows the entire Title where clips are used. New Selection hotkeys include **Select All Time** and **Select All Tracks**.

Right-click on a selected or empty track region for the popup menu and choose **Zoom to Extents** or **Zoom to Selection**. The Zoom controls below appear.

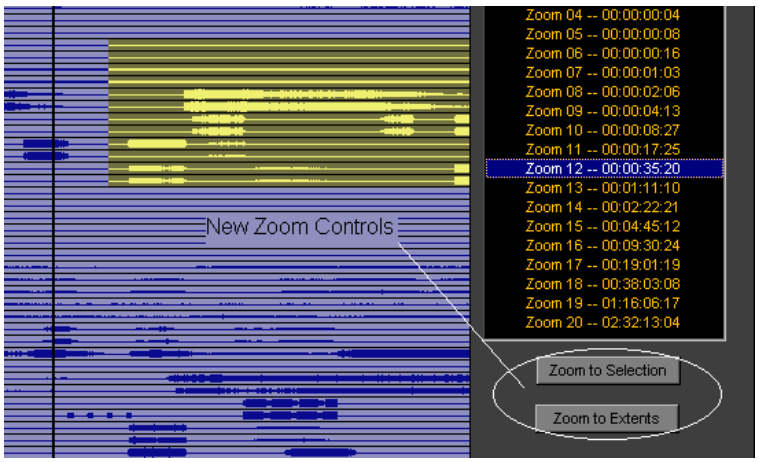


Figure 2-7 The Zoom to Selection and Zoom to Extents controls

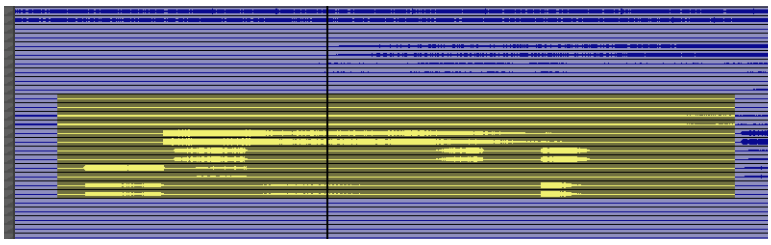


Figure 2-8 Zoom to Selection

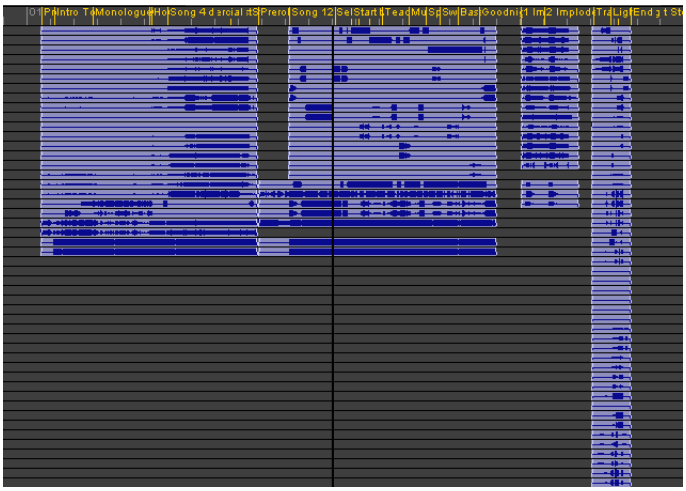


Figure 2-9 Zoom to Extents

2.3 Bars and Beats

The R-1's extensive Title Time display now includes **Bars, Beats, and Ticks**. When selected, the time locator accepts and displays time information in these more musically meaningful units. A tempo map editing page permits up to 16 tempo regions per Title. A click track can be created using one imported WAV file for the beat marks of the current tempo map and a second WAV file for the downbeat (see *Create a Click Track* on page 23).

Bars and Beats time display differs from other display modes because it depends on the tempo and time signature, both of which can change independently during a single title. The R-1 represents these changes as a tempo region; there can be 16 regions per Title.

2.3.1 Tempo and Time Signature

A *beat* is one unit of the bottom number of the time signature. For example, in 3/4 time, a beat is one quarter note. Tempo is represented as *beats per minute* (bpm); the allowable range is 1–960 bpm. The top number in the time signature indicates the number of beats per measure.

NOTE: *We recommend programming the time and tempo changes into your R-1 Title before recording. Then use the click track feature to provide a reference for recording.*

On the Remote

1. Press the **Time Display** button on the Remote.
2. Press the **Select** button to enter the **Format/Res** (time format and resolution) menu.
3. Use +/- to scroll to **Bars, Beats, Ticks**, then press **Select** again.

   If selecting the **Bars, Beats, Ticks** display for the first time within this Title, you will see a the default tempo region: tempo = 120 bmp in 4/4 time counted from the zero position in Absolute Time.

   Now you must edit the Tempo Map to match the music you are about to record, which can be done only in the software.
4. Click at the top of the Current Time Display (on the time units) to toggle through the different format and display resolution options available.

   Alternately, right-click at the top of the display and select **Bars, Beats, Ticks** (the last popup menu item).
5. Click on the **Map** button above the Current Time Display (when in **Bars, Beats, Ticks** mode).

   The **Edit Tempo Map** window opens.

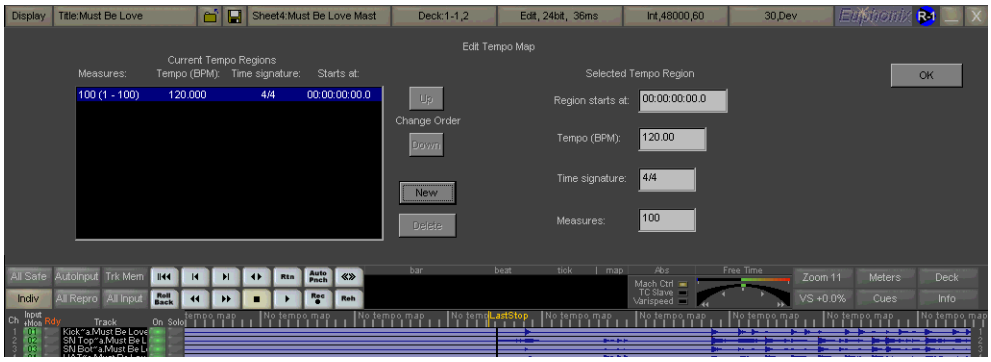


Figure 2-10 Edit Tempo Map Window

On the left side of this display the list of Tempo Regions is shown. Each region is defined by the:

- length of the region in musical measures;
- tempo in beats-per-minute (bpm);
- time signature for this region;
- starting time code for this region in case you need an absolute reference.

NOTE: *Titles created by version 2.0 software that enter **Bars and Beats** for the first time will not automatically create the first tempo region. Create the first or additional regions by clicking **New**.*

---

6. Click on any item in this list to highlight that Tempo Region.

   Its parameters become editable in the four fields to the right, below **Selected Tempo Region**. The first field, **Region starts at,** is editable only for the first tempo region in the map. This start time for the first region is the offset for the entire Bars and Beats Tempo Map. Entering an inappropriate value causes the software to interpret it as time code = 0.

   Newly entered values for these tempo region parameters appear in the tempo region list on the left when any one of three things occur:

   - Place the cursor in a new field;
   - Select a different tempo region in the list on the left;
   - Press **Return** or **OK** to close the dialog.

7. Close the **Edit Tempo Map** window to re-arrange the track display to reflect the new time display mode.
8. Enter a Tempo in the range 1–960 bpm.
9. Enter a time signature.

   The bottom number must be a power of 2 (i.e., 2, 4, 8, 16, 32, 64, etc.).

10. Enter the number of measures for this region.

    The default number is 100.

11. After creating the first tempo region, press the **New** key.

    This places a new region with default values at the end of the map. This new region is automatically highlighted to allow editing. Continue adding new regions until the Title is completely mapped.

2.3.2 Re-order Regions

Tempo region locations within the tempo map can be altered by using the **Up** and **Down** buttons. Delete unused tempo regions by clicking the **Delete** button.

2.3.3 Create a Click Track

A click track can be created using one imported WAV file for the downbeat of the measure and a second WAV file for the other beat marks of the current tempo map.

To create a click track:

1. Right-click on the track name on the track in which you want the click track to exist.
2. Choose **Make Click Track** from the popup menu.

   The **Make Click Track** dialog appears.
3. Press the **Edit Tempo Map** button and adjust your tempo map settings for your song as described in *Tempo and Time Signature* on page 20.
4. When finished editing your tempo map in the Tempo Map dialog, press **OK** to display the **Make Click Track** dialog.
5. Click on the **Import new Measure File** button to select a sound to play on every downbeat.
6. Click on the **Import new Beat File** button to select a sound to play on every beat.
7. Click on **Paste Clicks** button to finish creating the click track.

Chapter 3: File Management

Although there are no changes to the disk drive format from version 2.0 to 3.0, there are new methods to create and access files:

- Launch a new Title from the Remote while entering the name of the new Title in the same operation.
- Export Sound Files from the R-1 audio disks to the R-1 Pilot operating system (or network) in Broadcast Wave format.
- Import Microsoft Wave files from the R-1 Pilot operating system (or network) on the R-1 audio disks as Sound Files.
- Copy files from the Directory into the Multitrack.

3.1 Launching New Titles

There are two *New Title* options in the Remote menu. Pressing **Title** then **New** on the Remote is identical to clicking the **Title** button in the Navigation Bar in software and selecting **New**. A dialog appears to provide a name or accept the automatically generated default name.

Save your current Title before launching a new one by pressing the **Title** button followed by **Save**.

On the Remote

then

To launch a new Title:

1. Press the **Title** button.

   The **Title** button begins flashing.

2. Press the **New** button.

   The **New Title** dialog appears on the monitor screen.

3. Use the keyboard to type in the **Title** name and press **Enter**.

3.1.1 The Significance of Good Naming Practices

We highly recommend naming your Title and Tracks because these names are used to create a Library for all recorded Clips and Tracks. Unlike software designed for static documents, the R-1 generates and names large numbers of files in response to punch and other record operations.

The Old Feature

If you are not concerned about long-term asset management and just want to launch a Title quickly with automatic naming:

1. Press the **Title** key.

   It begins flashing.

2. Move forward in the Remote menu to the next option **New (from Remote)**,
3. Press the **Select** key.

This method essentially executes the same **New** command that the Remote provided in previous versions of the R-1.

As a shortcut to this old method of operation, select **Wave+New** (after pressing the **Title** key). Either method creates an automatically named Title. The R-1 Remote shows the name it selected for the new Title. Press **Select** to clear this display.

3.2 File Interchange

The R-1 can now capture sound files from either the R-1 Directory system or the displayed track sheet, and export them as Broadcast WAV (BWAV) files. BWAV files are extended versions of the WAV format. They are compatible with any software that reads WAV files (Windows and Macintosh platforms), even if that software does not use or preserve the additional data. BWAV is the standard file format of the European Broadcast Union and of the committee developing the AES 31 file interchange standard.

The main advantage of the BWAV format is the preservation of track and time information between a BWAV-compatible editing system and the R-1. The R-1 can export the file to the editing software and then re-import the file to the precise time and track from which it was originally exported. The R-1 can also import standard WAV files.

The R-1 creates multichannel files from its linked channel recordings. Imported source files and exported target files can be located on the R-1's local drive, an optional random access SCSI drive attached to the R-1's port, or a networked storage device attached to the R-1's built-in Ethernet port.

To facilitate the R-1's use as a 24-bit/96 kHz mastering recorder, version 3 allows direct transfer of multichannel BWAV files to a DVD authoring system.

3.2.1 Export from the Directory Software Panel

In the Audio Browser, select either **Media** or **Libraries**. Then select a Disk drive or Library in the Tree Panel to see its Sound File contents. Using the Media display mode allows retrieving sounds from a disk drive regardless of the associated Title, while the Library mode retrieves sounds from a particular Title regardless of its location. Note that after selecting a sound file, the Audio Browser **Copy To** button changes to **Export**.

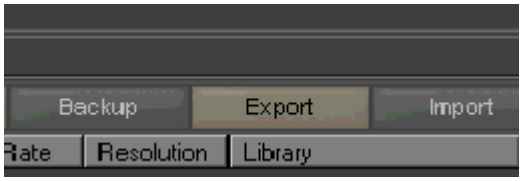


Figure 3-1 Export button illuminates when Sound File is selected

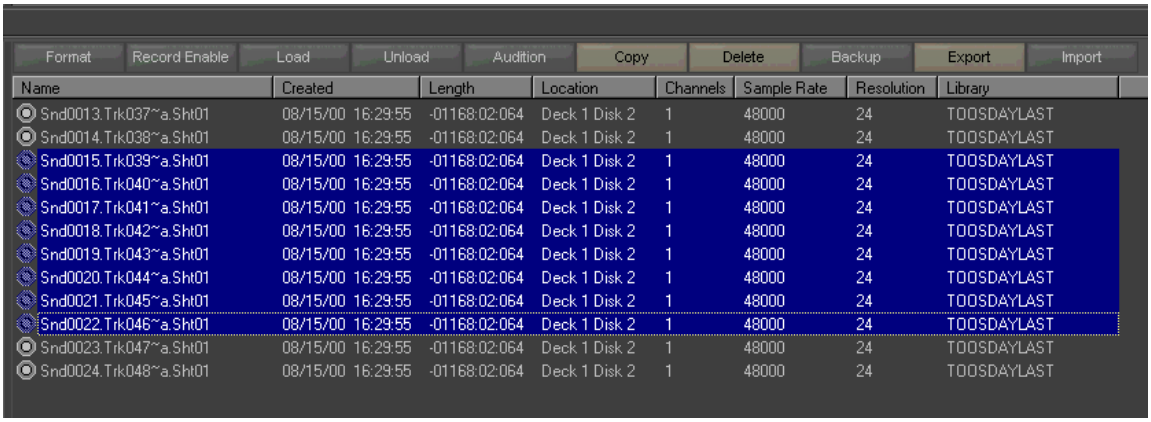


Figure 3-2 Multi-selecting Sound Files for Export

In the Audio Browser, multiple Sound Files can be included in the **Export** command:

1. Click on a Sound File.
2. Press the **Ctrl** key and click on additional Sound Files.

You can also select a range of adjacent Sound Files:

1. Click on the column heading at the top of the Sound Files list to sort the Sound Files by that criteria.

   This allows grouping files of a certain length or containing the same base name.

2. Click on the first Sound File in the list that you want to include then press the **Shift** key and click on the last Sound File.

   All files including and between the top and bottom file are selected.

3. Click the **Export** button to display the **Export to Wave** dialog (page 29).

3.2.2 Export from the Multitrack Panel

1. Right-click and hold down on the Clip to export.

   This selects the Clip and opens the **Clips** popup menu.

NOTE: *Right-clicking on an already selected region (not a single Clip), pops up a generalized editing menu without export and import commands.*

---

2. Choose the **Export** command.

   The **Export** dialog appears.

It is only possible to export one Clip at a time from the Multitrack.

Figure 3-3 Export command in the Clips popup menu

The Export to Wave Dialog

This dialog works as a batch handler if it has been launched from the Directory panel with multiple files selected. When launched from the Multitrack it will list, and therefore export, only one file at a time. The top of this display shows where the files will go. This is set to be C:\Euphonix\Sound Files by default but can be changed by re-entering another path. It is also possible to change the path by selecting a file and choosing to **Edit the Export File Name** (see below).

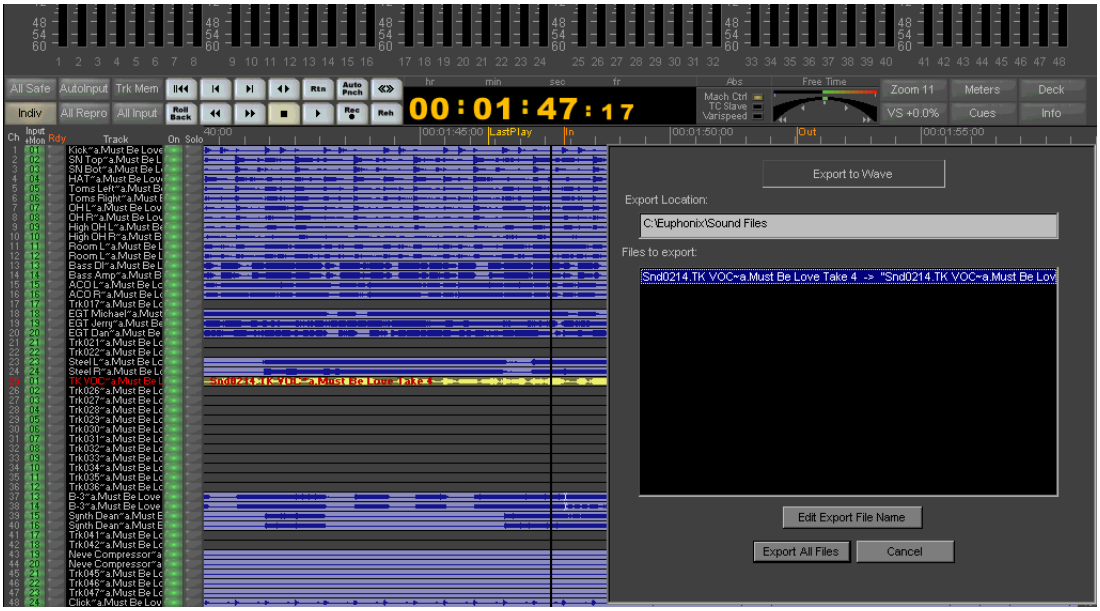


Figure 3-4 The Export to Wave Dialog launched from the Multitrack

Changing the path is generally not recommended. The default location allows operators and Euphonix R-1 product support technicians to locate exported files on any system. The R-1 will only be able to recognize exported and edited files if they are not moved around on the Pilot.

There are some exceptions to this rule, of course. Exporting to a network can be very useful. Consult your network administrator to create a network path for this setting. Although R-1 product support can help in this process, you must have knowledgeable staff available to support your network. The R-1 can also be configured to include a removable storage device on the Pilot's SCSI bus (68-pin connector is on the rear of the Pilot). Your in-house systems administrator must take responsibility for configuring any external device under Windows 98-SE. The new device will be located at either *drive D:* or *drive E:* (recommended). Files can be written to the drive's root directory or your system administrator can create a subdirectory for the exported files to reside.

NOTE: *The export path must already exist on the drive before it is entered into this field.*

You can also change the name of the file when it is exported. For example Snd0006.Trk41~a.Sht01 might be a birdcall sound used on an interactive computer media project where the R-1's autonaming is meaningless.

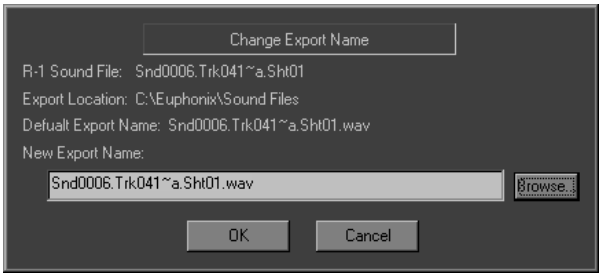


Figure 3-5 Change Export Name Dialog

1. Click on the desired Sound File in the list.

   Once the file is highlighted, the **Edit Export File Name** button becomes active.

2. Click **Edit Export File Name** to open the **Change Export Name** dialog.

   The name and path of the sound file can be changed from this dialog.

3. Press the **Browse** button to open the **Select New Export Directory** dialog.

4. Navigate to the new Export path.

5. Press the **Save** button to set this path for all exports until changed.

   Assign a new export file name or close the dialog (saving the selected path) and enter the new export file name in the previous dialog.

Exporting Multichannel Files

It is also possible to export multichannel recordings to a single file. To export a multichannel audio file, you must first link the R-1 channels onto which the audio will be originally recorded. There is no way to combine separate unlinked recordings into a single export file. When tracks are linked before making a new recording, the recording appears in the Audio Browser as a single file.

NOTE: *Although the R-1 does not actually interleave its recordings, it treats a collection of linked files as a single file for convenience. The R-1 automatically names the resulting Directory item according to the first name of the adjacent linked tracks.*

For example, if tracks 1–4 are linked, placing any of these tracks into record places them all in record. The punch in and out points for Clips on these tracks will also be locked together. Only one Directory item (Sound File name) will be created for all of these Clips. The automatically applied name would be Snd0001.Trk001~a.Sht01 (the first sound recorded on Track 1, Sheet 1) even though it really represents four sound files recorded on the first four tracks. See pages 156 and 204 in the *R-1 Operation Manual* for more information on linking.

Exporting a multichannel Directory item results in a multichannel Broadcast wave (BWAV) file. This single, exported file has interleaved channels according to the Microsoft WAV file specification. Several products use this format, most notably DVD-A authoring systems. Link your recording track when using the R-1 as a master recorder, then the tracks can be exported as a single BWAV file.

3.2.3 Importing WAV Files

The R-1 can also import files from the R-1 Pilot computer to the Multitrack's Track Sheet or to the Directory's Audio Browser. From the Multitrack a WAV file can be imported to the position (Time and Track) from which it was previously exported. From the Directory you can get the same effect by choosing to overwrite a Sound File that is already referenced by a Clip on a Track.

Unlike export, the import command can act upon multiple sound files from within the Multitrack panel. It is not necessary to select all the Clips that will be replaced because the track and time information has been stored in the BWAV file format. You may want to import only a single file at a time until you are familiar with this feature.

Remember that multichannel BWAV files can be imported via the Multitrack as well, but the target tracks must be linked. From the Directory you can import files into a placeholder Library called **Imported Sound Files** with the advantage that they do not overwrite other sound files. This approach is also helpful when new, un-positioned files are added to a Title.

3.2.4 Import to the Directory

Before importing files into the Directory, the R-1 must be set to the correct Disk. Navigate to Media, then to a specific Disk, which illuminates the **Import** button in the Audio Browser. Clicking on the **Import** button opens two dialogs simultaneously (Figure 3-6 and Figure 3-7). The **Add Wave Files to Import List** dialog selects files from the R-1's Windows or networked file systems. This dialog must be closed to access the **Import Wave Files** batch dialog behind it that names incoming file(s) and chooses whether to overwrite existing files that may have been used to create the original file. You can redisplay the first dialog for selecting new files by clicking the **Add Files to Import List** button.

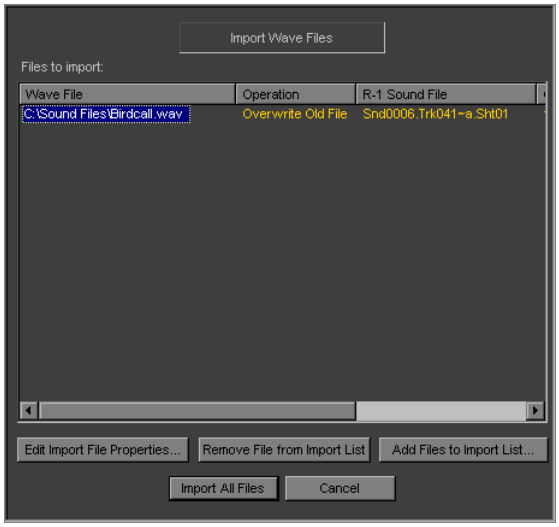


Figure 3-6 The Import Wave Files dialog

3.2.5 Import to the Multitrack

1. Right-click on any Sound Clip on the track where you want to use an imported sound and choose **Import**.

   The **Import Wave Files** batch dialog appears. If the selected Clip has never been exported, the **Add Wave File to Import List** appears to allow selection of the WAV file to import. If the WAV file cannot be positively identified as originating with the sound file of the selected Clip, you can only import that file into the Directory as described above. If the selected Clip has been previously exported, the export name will automatically be listed in the **Import Wave Files** batch dialog.

2. To include other files in the Import batch command, press the **Add Files to Import List** button.

   The **Add Wave File to Import List** dialog that appears is a typical Windows file dialog.

3. Select one item or several using the **Ctrl** or **Shift** keys.

4. Click the **Open** button to confirm the addition of these files to your list.

   The dialog closes leaving the **Import Wave Files** batch dialog open.

Those sounds from previous exports are labeled *Overwrite Old File*; sounds not from previous exports will be labeled *Create New File*.

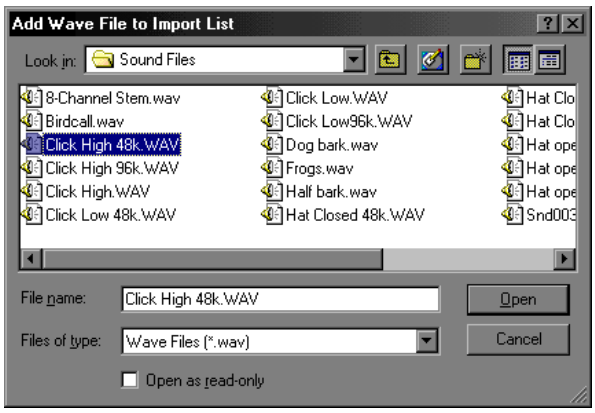


Figure 3-7 The Add Wave File to Import List dialog

Import Wave Files
Files to import:
Wave File
Operation
R-1 Sound File
C:\Sound Files\Hat Closed 48k.WAV Create New File Hat Closed 48k.WAV
C:\Sound Files\Birdcall.wav Overwrite Old File Birdcall.wav
C:\Sound Files\Click High 48k.WAV Create New File Click High 48k.WAV
C:\Sound Files\Click High 96k.WAV Create New File Click High 96k.WAV
C:\Sound Files\Click High.WAV Create New File Click High.WAV
C:\Sound Files\Click Low 48k.WAV Create New File Click Low 48k.WAV
C:\Sound Files\Click Low.WAV Create New File Click Low.WAV
C:\Sound Files\Click Low96k.WAV Create New File Click Low96k.WAV
C:\Sound Files\Dog bark.wav Create New File Dog bark.wav
C:\Sound Files\Frogs.wav Create New File Frogs.wav
C:\Sound Files\Half bark.wav Create New File Half bark.wav
C:\Sound Files\8-Channel Stem.wav Create New File 8-Channel Stem.wav
Edit Import File Properties...
Remove File from Import List
Add Files to Import List...
Import All Files
Cancel

Figure 3-8 The Import Wave Files dialog

To change the import operation for a given file, select it with the pointer and press the **Edit Import File Properties** button in the **Import Wave File** dialog.

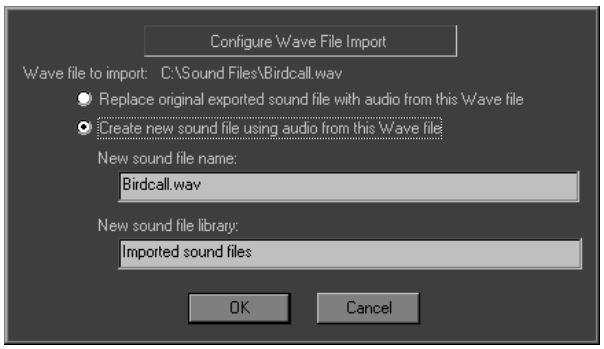

Configure Wave File Import
Wave file to import: C:\Sound Files\Birdcall.wav
Replace original exported sound file with audio from this Wave file
Create new sound file using audio from this Wave file
New sound file name:
Birdcall.wav
New sound file library:
Imported sound files
OK
Cancel

Figure 3-9 Replace or create a new Sound File

3.2.6 Using Imported Files or Files from Other Titles

Files that have been imported appear in the Directory where they can be selected and used in the current Title.

1. Select the Sound File in the list panel of the Audio Browser.
2. Click the **Copy** button above the Audio Browser.

   This puts the Sound File(s) into a copy buffer where they can be pasted into the open Title.
3. Change back to the Multitrack software panel by clicking on or pressing the **Display** button.
4. Select the tracks to use and paste the files (see page 44).
5. Press the **Paste** key on the Remote.

   Alternately, right-click on the selected Track name and choose **Paste** from the popup menu.

There is currently no difference between Paste and Paste Relative for dropping files from the Directory to a Multitrack Sheet.

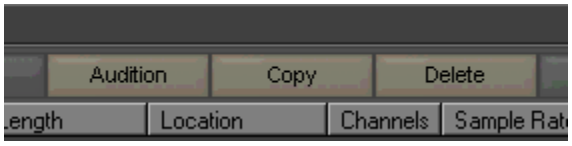


Figure 3-10 Selecting a Sound File illuminates the Copy button

If the imported or copied file is multichannel, link the same number of channels in the R-1 Multitrack panel before pasting. Selecting any one of the linked tracks selects the others. Pasting to those tracks provides the expected multichannel playback.

The paste operation uses the copied number of channels to paste to the selected destination. For example if you have eight channels copied (possibly under one eight-channel file name), but only four Tracks selected, the first four copied channels are pasted onto the four selected Tracks. Be careful to map copied channels to their proper destinations.

See page 203 of the *R-1 Operation Manual* for more information on linking.

3.2.7 Restoring a Title from Its Library of Sounds

When the **Copy from Directory then Paste on Multitrack** feature is applied to an entire Library of sounds, the original time stamps are used to automatically construct an equivalent Title.

This feature is most useful when if a Title was inadvertently deleted from the audio disk: the recordings remain on disk but their timing information is missing.

1. Create a New Title.
2. In the Directory, click on the **Libraries** button in the Audio Browser tree panel.
3. Click on the Library to place into the new Title.

   The Library name will usually match the Title from which you are copying the audio.
4. Press the **Copy** button.
5. Switch back to the Multitrack panel, select all Tracks, right-click on the selected track names, and drag to the **Paste** command.

The position of the Now Line is not used for these pasting operations.

NOTE: *This procedure will not distinguish between sounds recorded to different Sheets. In an effort to emulate the original layering of the Sound Files on Tracks, the paste operation uses the order in which the sounds were created to layer the most recent sounds on top of earlier sounds. However, if the Title is comprised of multiple Sheets, all sounds will be layered into one edited Sheet, which may or may not be useful in your application.*

Chapter 4: Locator and Track Controls

This chapter discusses changes to the track and Locator functions. While the Locator changes are mostly small conveniences, the track control changes affect monitoring and are fundamental to the R-1 operation.

- All Repro and Auto Input are now mutually exclusive.
- The R-1 creates multichannel files when recording channels are linked. This feature is not new, but is now more significant in relation to file importing and exporting.
- The Reel Trim key on the Remote can locate within the Title.
- The Cue Track in the R-1 software Multitrack panel now accepts and responds to the trackball pointer.
- The **Next** and **Previous** Locator keys can be pressed together with the **Wave** key to locate Clip edges.

4.1 Track Controls

4.1.1 Monitoring

All Repro and Auto Input are now mutually exclusive. When All Input or All Repro is selected, Auto Input is ignored in monitoring but continues to be lit if enabled. If Auto Input is enabled while in All Repro or All Input, the action forces the track controls back to Individual. If the user disables Auto Input while in All Repro or All Input, there is no additional effect.

All Repro overrides the Input/Repro LEDs when stopped.

See page 194 of the *R-1 Operation Manual* for global Track Controls.

4.1.2 The Effect of Linking

After linking channels according to page 204 in the R-1 Operation Manual, Sound Files recorded to these Tracks are designated as multichannel. Multichannel Sound Files have only one entry in the Directory's Audio Browser: there appears to be one file even though the R-1 actually stores a single-channel file for the audio referenced by each Clip on each Track. The single-channel files are, in effect, hidden.

This is done because linked channels produce different legs of the same recording since the track record status, monitoring, and punch points are all linked and identical for these channels. When editing and importing multichannel sound, the open track sheet should be configured with channels linked accordingly. This will produce Sheets that play all desired audio from all channels.

A multichannel file can be pasted into a smaller number of channels. Select the number of channels to edit without linking them, then paste the multichannel file. Channels are pasted in the order they occur in the original file. For example, if the multichannel file has six tracks and the destination has three, the first three tracks from the multichannel file are pasted. Refer page 204 of the main *R-1 Operation Manual* for more information.

4.2 The Locator

4.2.1 The Cue Track

The Cue track now supports a right-click menu to adjust various Locator controls including **Go to Here** and **Loop to Here**. These controls may be easier and/or faster to access than those on the Remote.

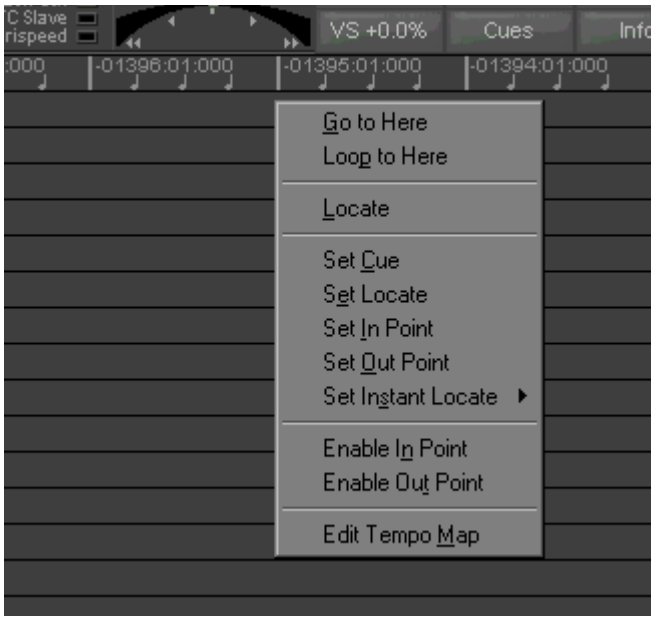


Figure 4-1 Cue Track right-click menu

4.2.2 Reel Trim

The Remote now supports **Reel Trim** (next to the **Shuttle** button), allowing the **SpinKnob** to navigate inaudibly through material to look for gaps or downbeats. Using the **Reel Trim** simultaneously with the Remote's quick Zoom keys locates quickly and precisely.

On the Remote

then

4.2.3 Jog, Shuttle, and Reel Trim with the Pointer

On the Multitrack display panel, **Reel Trim**, **Jog**, and **Shuttle** are all supported under trackball control. The play head can be dragged (while in **Stop**, **Jog**, or **Shuttle** mode) by clicking on the Cue Track, holding down, then pulling the cursor toward the material to play. Press the **Ctrl** key to reverse the effect of pulling the cursor across the Cue Track. Toggling with the **Ctrl** key is a convenient method for rolling back and forth across a given area.

Accomplish Reel Trim by clicking and dragging on the Cue Track (while in Stop).

or click on

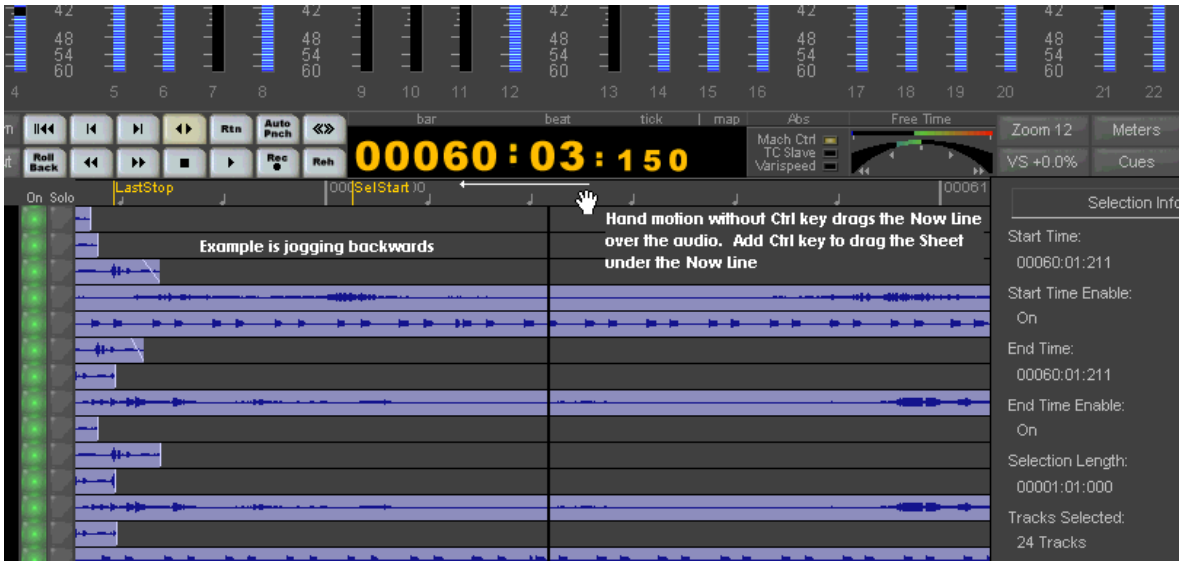
then

Alternately, use the pointer with Shuttle for audible dragging.

or click on

then

Alternately, use the pointer with Jog.



Pull the cursor left to play backwards.

Hold down the **Ctrl** key to pull audio against Now Line.

4.2.4 Clip Edge Locating

Use the **Next** and **Previous** keys to jump sequentially from Cue to Cue. Press the **Wave** and **Next**/**Previous** keys simultaneously to locate to Clip edges. All Clips on all tracks are included according to their time.

On the Remote

00:17:22.052
Zoom 12
Meters
Deck
VS +0.0%
Cues
Info
Trailing Clip edges will also be detected in both directions
With the Now Line positioned as shown the Wave + Next keys will jump to Clip edges in sequence as numbered here.

With the Now Line positioned as shown above, the **Wave+Next** keys jump to the next Clip edge in the numbered sequence. Trailing Clip edges will also be detected in both directions.

Chapter 5: Editing and Selection Features

Clip-based selection and editing along with the waveform display make the R-1's editing tools easier and more powerful to use. Waveform display makes locating edit points easier and faster. These enhancements allow a greater range of editing operations on the R-1 without transferring to a separate editor and can even fix problems that previously required punch recording.

This chapter discusses all changes and new functionality for selecting and editing Clips and time on the Track Sheet:

- Cue Track Editing
- Selecting Clips
- Wireframe Selection
- Right-click menus
- The **Information** drop-down panel in the Multitrack

Refer to page 260 of the *R-1 Operation Manual* for more information of the editing features of the R-1.

5.1 Editing Features

Version 3 allows greater editing interaction between the trackball and keyboard. The trackball cursor can now select Clips (punch segments) with a single click. It is now also possible to *wireframe select* using the trackball and to precisely adjust Clip, selection, or track parameters in a context-sensitive **Information** dialog. The time of the trackball's cursor is shown as a parameter to allow precise selection without changing the play location. Many edit operations are now accessed from drop-down menus, such as restoring the original recording parameters to previously edited Clips.

5.1.1 Paste Relative

A pasted Clip can maintain the same offset to the Play head as when the Clip was copied. This allows spotting a sync point during the copy operation and using it to locate the paste point with a minimum of keystrokes. Sheet-to-Sheet track copies are also automatically synchronized using this feature without relocating the play head.

Press **Wave+Paste** on the Remote, or right-click on any Track and choose **Paste Relative** from the popup menu.

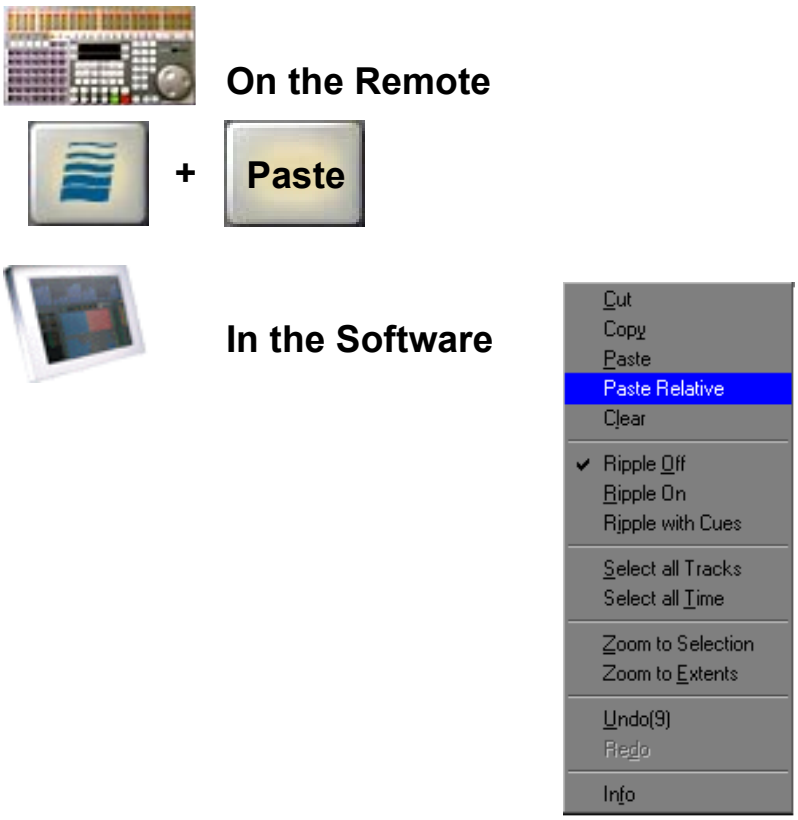


Figure 5-1 Paste Relative in the Track Edit and Selection popup menus

5.1.2 Place Clips from the Directory

Audio clips from other Titles or imported from another file format can now be placed in tracks of the current Title.

1. Select the Sound File(s) in the Directory's Audio Browser list panel.
2. Press the **Copy** button.
3. Press the **Display** button to switch back to the Multitrack panel.
4. Select the Tracks where the audio clips will go.
5. Position the Now Line at the time where you want to paste the Clip.
6. Choose the **Paste** command from either the Remote or the Track Edit popup menu (right-click on the selected Track).

If more than one Track is selected as the destination for the paste operation, the number of files copied from the Audio Browser is relevant. Multi-copied files and multichannel files from the Directory paste as many of their channels as will fit in the selected tracks.

When this feature is applied to an entire Library of sounds, the original time stamps are used to automatically construct an equivalent Title. This use of the feature is used to recover or recreate a damaged or deleted Title.

1. Create a New Title.
2. In the Directory, click on the **Libraries** button in the Audio Browser tree panel.
3. Click on the Library that you want to place into the new Title.

   The Library name will usually match the Title from which you are copying the audio.

5.1.3 Cue Track Editing

The R-1 has always supported cut, clear, copy, paste, and slip editing with the option to adjust or maintain the time stamps of audio clips downstream from the editing location. Version 3 allows selection and editing of the Cue Track (list of Cues) from the GUI or Remote. Editing the Cue Track during other Rippled edits keeps the Cues synchronized with any slipped material.

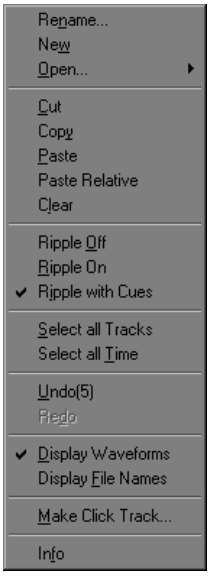


Figure 5-2 Ripple with Cues selected in the Track Edit popup menu

Right-click on any track to open the Track Edit popup and select **Ripple with Cues**. The Cue list will now be edited when time is inserted or deleted from the Track Sheet. The Cue list is extended by inserting blank time, but contracted by deleting time. Cues located within the deleted time are removed from the list.

5.2 Selection Features

5.2.1 Selecting Clips

A Clip is formed each time you punch in and out on a Track. A Clip is a reference to the underlying audio recorded and stored as a Sound File in the R-1 Directory system. Editing in the Multitrack panel changes the Clips but not the Sound Files they reference. The list of Clips on a Track, often described as an *Edit Decision List* (EDL) is small and manageable (by comparison to actual audio files) so multiple versions of the EDLs can be managed by Undo and Redo commands.

In previous versions, working on an EDL required selecting a region of time, then executing the edit operation. This was sometimes called Mark-In/Mark-Out editing because the selection region is constrained by the time of its start and end points. The start and end points for the selection area do not have to correspond to the arrangement of Clips already on the Track. If the selection starts in the middle of a Clip then only the later half of the Clip will be affected by the edit. Conversely, if the end point lands in the middle of a Clip then only the first part of that Clip will be edited.

Figure 5-3 Select a complete Clip by clicking on its waveform/block.

Mark-In/Out selecting is flexible and provides ample control over where an edit will start and end but can be clumsy when selecting an entire punch without including time on either side. Clip-based selection is more appropriate for these types of operations. Select a Clip by pointing to it with the trackball cursor and clicking.

NOTE: *The Clip head and tail define the Selection Start and End points. These region selection controls continue to work just as they did before. Clicking on a Clip automatically turns the global* ***Selection Control*** *On. Adding another Track to the selection area using the* ***Ctrl*** *key simply activates that Track and applies the Start and End Selection constraints to that Track. You cannot multi-select Clips of differing time durations or positions on various Tracks.*

5.2.2 Wireframe Selection

The trackball pointer can select regions of Track time.

1. Click on any empty track area.
2. Hold down the trackball left-button and drag the cursor over the Track Sheet.

   A rectangular selection grows from that point.
3. Up or down motion of the dragging cursor adds or removes Tracks from the selection area. Left or right motion adds and subtracts time.

   The resulting selection area will be over a contiguous Track and time range.
4. Add discontinuous Tracks to the selection by clicking on the Track names while holding down the keyboard **Ctrl** key.

The selection start and end points will not change when adding new Tracks to the selection.

If you cannot click on empty track area, hold down the keyboard **Alt** key and click directly on a Clip. The wireframe begins on top of the Clip at the time of the cursor location.

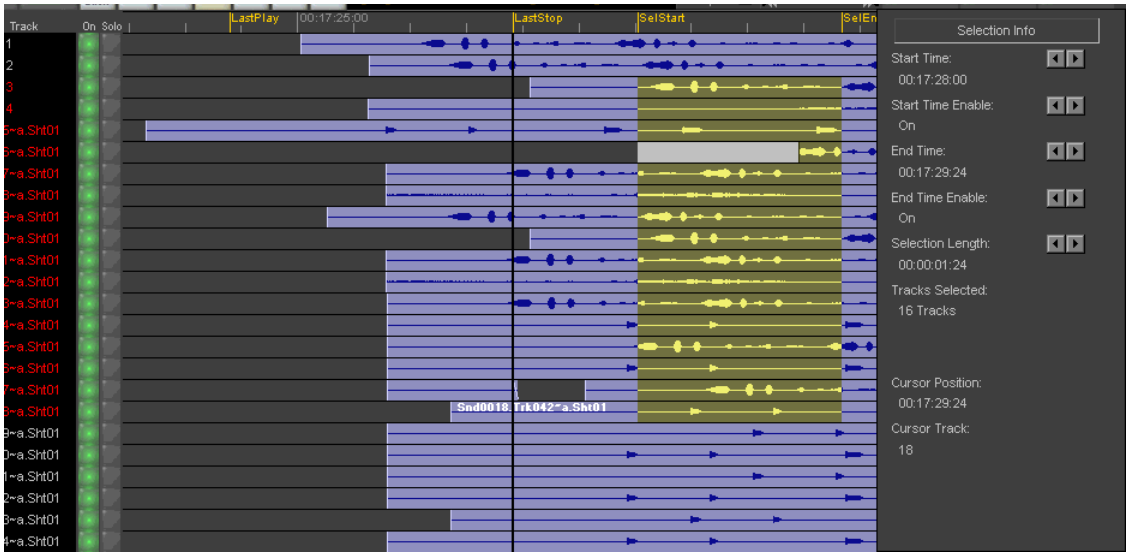


Figure 5-4 Wireframe Selection

5.2.3 Selecting Everything

As documented on page 264 of the main *R-1 Operation Manual*, press **Wave+Select(Enable)All** on the Remote to Select All Tracks. With version 3, Select All Tracks and Select All Time are also offered in popup menus.

5.2.4 Context-Sensitive Popup Menus

Right-clicking with the trackball pointer produces context-sensitive popup menus in several new places. Right-clicking never does anything harmful or data altering, so you can experiment to explore these new menus (Figure 5-5 and Figure 5-6)

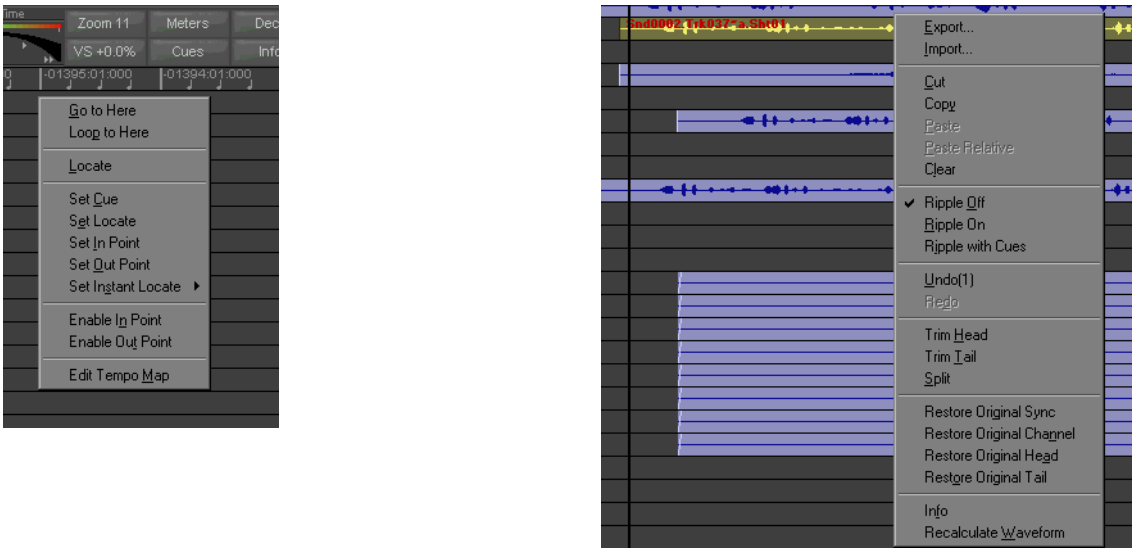


Figure 5-5 Cue Track (left) and Clip Select (right) Right-click Menus

Figure 5-6 Track Name Select Right-click menu

The Meters section also includes a right-click menu for metering options.

5.3 The Info Drop-down Panel

The cursor location in the Multitrack panel determines the information available about the Title. You can even edit the contents of the Title with the **Info** drop-down panel. Click the **Info** button on the far-right/center of the Multitrack panel. Like other buttons in this area, clicking the **Info** button while the panel is open closes it.

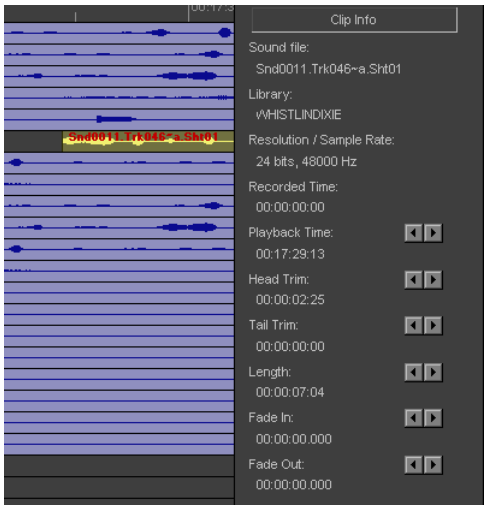


Figure 5-7 Clip Info dialog

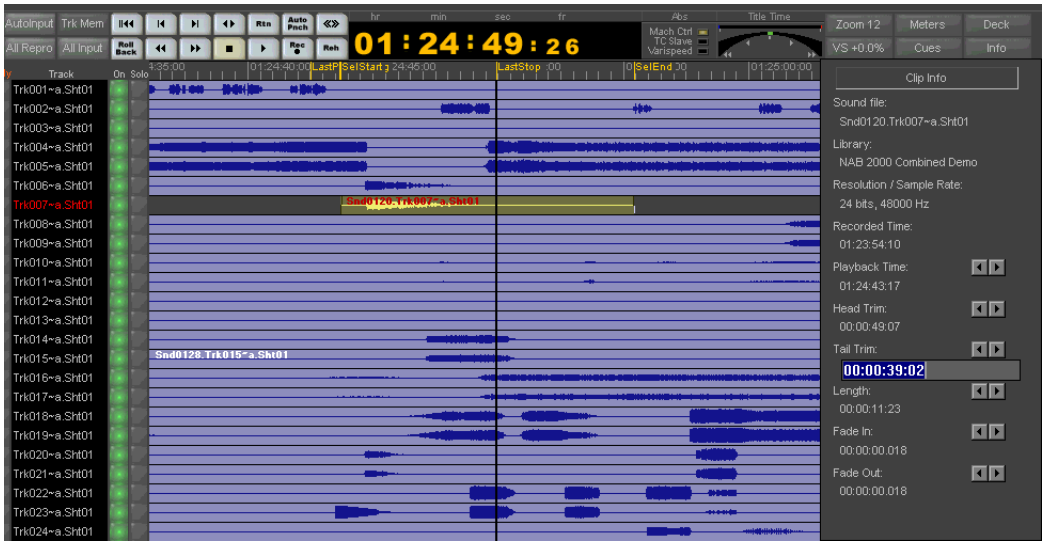


Figure 5-8 Editing the Tail Trim in the Clip Info dialog

5.3.1 Clip Info

All Parameters in the following table are editable except Resolution/Sample Rate.

Table 5-1 Clip Info

Parameter Name	Meaning	Comments/Constraints
Sound File	The name of the recorded Sound File that will be played for this Clip	Editing changes the Sound File name, but not the Sound File referenced
Library	The Library in which the Sound File is stored within the Directory system	Editing moves the Sound File to the entered Library. A new Library is created if the Library name does not exist
Resolution / Sample Rate	The number of bits per sample (bit width) and the number of samples per second when this Sound File was recorded.	System settings at the time of the original recording Bit width = 16 or 24, and files of either type can be used (played) anywhere and together in the same Title or track Sample Rate range 31–100 kHz, but cannot be used interchangeably or together as each Title has a specified SR. When the sample rate exceeds 50 kHz, the R-1 must re-allocate its resources for fewer tracks.
Playback Time (also called Position or Time Position)	The time within the Title of the first playable sample of this Sound File.	Editing the Playback Time changes the time position of every sample within the playable portion of the Sound File. Editing the Playback Time does not affect parameters within the Clip. Editing the Head Trim adds or subtracts samples to the beginning of playable portion of the Sound File, thus altering the Playback Time. This does not change the time position of every sample within the playable portion of the Sound File.
Head trim	Number of samples (in units according to the current time display mode) from the beginning of the original recording until the first sample for playback.	Editing the Head Trim changes the Playback Time. Editing Head Trim does not, however, affect the synchronization of the Sound File on the Track, which can only be changed by editing the Playback Time directly.
Tail Trim	Number of samples (according to the current time display mode) from the end of the original recording until the last desired sample for playback.	Editing the Tail Trim changes the Length
Length	Number of samples of the Sound File to play.	Clip Length = (Sound File Length – Head Trim) – Tail Trim Editing the Length changes the Tail Trim

Fade In	Length from the beginning of the playable portion of the Sound File (Clip edge) to where fade in is completed (first 100% volume sample)	Set by the cross-fade time for Punch In/Out points during record. Once recorded the crossfade time for each clip is unique and editable. Actual crossfades require two Clips be overlapped. If not overlapped, then a fade in or out occurs. When a new Clip is formed by cutting or copying a portion of an existing Clip, the fade parameters of the originating Clip are used in the new Clip (until edited). Fade shapes are linear.
Fade Out	Length from the end of the playable portion of the Sound File (Clip edge) to where fade out starts (last 100% volume sample)	Set by the cross-fade time for Punch In/Out points during record. Once recorded the crossfade time for each clip is unique and editable. Actual crossfades require two Clips be overlapped. If not overlapped, a fade in or out occurs. When a new Clip is formed by cutting or copying a portion of an existing Clip, the fade parameters of the originating Clip are used in the new Clip (until edited). Fade shapes are linear.

5.3.2 Track Info (when one track is selected)

Table 5-2 Track Info

Parameter Name	Meaning	Editable	Comments/Constraints
Track Name	The name of currently selected Track	Editable	Editing changes the Track name
Cursor Position	The current Cursor position with respect to time.	Adjustable elsewhere	Move the pointer to change. Updates continuously to allow for accurate positioning.
Cursor Track	The current Track to which the Cursor is pointing	Adjustable elsewhere	Move the pointer to change. Updates continuously to allow for accurate positioning.

5.3.3 Selection Info (with more than one track selected)

Table 5-3 Selection Info

Parameter Name	Meaning	Editable	Comments and Constraints
Start Time	The time position at which the selection area starts	Yes	This value is retained (and displayed) even when it is not being used (i.e. it is disabled). If Start Time is disabled then the Start Time is automatically set to zero. Use the Store Start (Enable) key to quickly enter this value at the current position, then use this Info Panel to precisely adjust the Start Time in small increments.
Start Time Enable	The on/off (enabled/ disabled) status of a selection start time other than Zero.	Switchable	When the Start Time is off the selection area automatically starts at zero. With both Start and End Times disabled the entire Track is selected. Use Wave + (Store) Start Enable key to toggle the Start Time status from enabled to disabled and vice versa.
End Time	The time position at which the selection area ends	Yes	This value is retained (and displayed) even when it is not being used (i.e. it is disabled). If End Time is disabled then the End Time is automatically set to 24:00. Use the Store End (Enable) key to quickly enter this value at the current position, then use this Info Panel to precisely adjust the End Time in small increments.
End Time Enable	The on/off (enabled/disabled) status of a selection end time other than 24:00.	Yes	When the Selection Start Time is off the selection area automatically starts at zero. With both Start and End Times disabled the entire Track is selected. Use Wave + (Store) Start Enable key to toggle the Selection Start Time status from enabled to disabled and vice versa.
Selection Length	The length of time from the Selection Start point to the Selection End point.	Yes	Editing this parameter changes the Selection End Point. If Selection End point is disabled then the Selection End point will be modified, but the actual selection area will not be changed.
Tracks Selected	The number of Tracks with the Selection region.	Adjustable elsewhere	This number primarily for informational purposes and changes according to Track selection operations happening outside of the Selection Info panel.